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ABSTRACT

Developed as part of the ABCs of Construction National Workplace Literacy Project, this instructional module is designed to help persons preparing for the occupation of millwright develop strategies for finding the meanings of compound words used in technical writing and the workplace. Presented in the first section is a method for deducing the meaning of compound words by performing the following steps: reading the compound word and finding the two smaller words within it, finding the meaning of the first word, finding the meaning of the second word, and putting the two meanings together. The remainder of the module consists of four exercises in which students are asked to use the four-step procedure to determine the meaning of a total of seven words encountered in the workplace. Each of the nine words is introduced in a brief paragraph on a topic related to some electrical and instrumentation occupation. Each paragraph is followed by a series of questions that guide students through the four-step procedure. (MN)

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## MODULES OF INSTRUCTION DEVELOPED IN GRANT CYCLE

1. Writing Frames for Construction Workers (10 exercises)

for low-level readers; consists of 10 "paragraphs" with open-ended sentences for workers to complete and recopy in their notebooks. Topics deal with work and training, such as "My Job," "Classroom Behavior," and "Listening to Myself."

2. Writing About Your Craft (10 topics)

for all students; list of 10 topics, such as "My Boss," "The Main Beef About My Job," and "How Work Orders Are Delivered." Used for integrating reading and writing in a job-specific context.

3. Building Workplace Vocabulary for E & I: Structural Analysis (80 pages)
Building Workplace Vocabulary for Millwrights: Structural Analysis(79 pages)
Building Workplace Vocabulary for Pipefitters: Structural Analysis(79 pages)

5th grade level; teaches word attack skills for technical terms, utilizing word parts and root words; includes hints for retaining meanings by building card file with visual representations of terminology.

4. Building Workplace Vocabulary for E & I: General, Specialized, & Technical Terms (58 pages)
Building Workplace Vocabulary for Millwrights: General, Specialized & Technical Terms (29 pages)
Building Workplace Vocabulary for Pipefitters: General, Specialized, & Technical Terms (32 pages)

5th grade level; teaches different kinds of vocabulary words encountered in work-related texts; drills for remembering new words; tips for building vocabulary; some dictionary use.

5. Building Workplace Vocabulary for E & I: Compound Words (28 pages)
Building Workplace Vocabulary for Pipefitters: Compound Words (18 pages)
Building Workplace Vocabulary for Millwrights: Compound Words (22 pages)

5th grade level; strategies for finding the meanings of compound words used in technical writing; works with words in context

6. Improving Listening Skills: Hazards Communication (18 pages)
Improving Listening Skills: Fire Extinguishers (22 pages)

a viewing, study guide that accompanies a commercial training video used in the required 8-hour OSHA safety course; learning new words, main ideas, and drawing conclusions are covered.

7. Measuring Decimals: Millwright (28 pages)

instruction and application problems

8. Improving Study Skills/Test Taking (60 pages)

6th grade level; good study skills are needed for success in the ABC Training program; explores strategies for organizing class notes and study time; analysis sheet for determining weaknesses in test preparation; how to schedule to arrange study time and work time

Computer Program

"Math for Pipefitters" is an interactive, multi-media program that covers fractions, decimals, angles, and right triangle geometry in a pipefitting context (88 screens)

**Instructor Information for the Pipefitter Series**

Seven workbooks have been designed to enhance the basic skills of pipefitters at the Technical Development Center. A brief description of each workbook follows:

1. Reading and Solving Basic Pipefitting Problems # 1
   Defines and uses eight basic terms pipefitters need to know. Reviews steps a Pipefitter must take to identify and solve a simple 90 pipefitting problem. Includes simple problems to find "take out" and welder's gaps.

2. Reading and Solving Basic Pipefitting Problems # 2
   Reviews seven basic terms pipefitters need to know: "center line," "cut length," "face to face," offset," "run," "take out," and "welder's gap." Uses each of these terms while solving 45 pipefitting problems. Introduces a five step method to solve pipefitting problems. Provides exercises to practice this five step method.

3. Practicing Problem Solving for Pipefitters
   Uses the pipes velcroed onto the movable wall in the TDC room to practice real pipefitter problems. Workers use the five step method introduced in Reading and Solving Basic Pipefitting Problems # 2 to find the "cut length" of the connecting pipe between pipes located on the movable wall. Exercises are designed to help the worker transfer the five step method to "handling" a physically real pipefitting problem.

4. Basic Vocabulary for Pipefitters
   Depicts and explains eleven terms pipefitters need to know. Has an exercise wherein the worker must fill in the blanks using the correct terms.

5. Basic Trig for Pipefitters
   Helps the worker to know what is a right triangle and to be able to "see" right triangles in pipe elbows. Reviews what the sides of a triangle are called: "hypotenuse," "adjacent" and "opposite." Practices how to "see" these sides in a pipe elbow. Shows the worker how to use a trigonometry chart to find the tangent of an angle. Includes exercises for to find "take outs" wherein the worker must use a trig chart to find the tangent of an angle.

6. Reading and Solving Pipefitter Take Out Problems
   Shows what a "take out" is in 90 and 45 elbows. Provides exercises to find "take outs" in 90 elbows. Reviews how to find a "take out" in a 45 elbow using a trigonometry chart to find the tangent of an angle. Provides practice exercises. Shows how to read The Pipe Fitters Blue Book to find the tangent of an angle then provides practice exercises.

7. Reading and Solving Basic Pipefitting Problems # 3
   Introduces four steps to take in order to solve simple offset problems when the elbows are not 45 or 90. Provides simple offset examples and problems.

MILLWRIGHT- COMPOUND WORDS 18 PAGES

<F1: Help>

Document Summary for: B:\MILLCOMP.DOC

| Readability Statistics | Interpretation |
|---|---|
| Grade level: 5 (Flesch-Kincaid) | Easy for most readers. |
| Reading ease score: 81 (Flesch) | This represents less than 6 years of schooling. |
| Avg. sentence length: 9.9 words | May indicate choppiness or lack of sentence variation. Try varying sentence length. |
| Avg. word length: 1.37 syllables | Most readers could understand the vocabulary used in this document, based on syllables per word. |
| Avg. paragraph length: 0.6 sentences | Avoid 1-sentence paragraphs in business or technical writing. |

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| | | | |
|---|---|---|---|
| **Readability Statistics** | | | |
| Flesch Reading Ease: | 81 | Flesch-Kincaid Grade Level: | 5 |
| Gunning's Fog Index: | 7 | | |
| **Paragraph Statistics** | | | |
| Number of paragraphs: | 242 | Average length: | 0.6 sentences |
| **Sentence Statistics** | | | |
| Number of sentences: | 146 | Short (< 12 words): | 119 |
| Average length: | 9.9 words | Long (> 30 words): | 0 |
| End with '?': | 26 | | |
| End with '!': | 0 | | |
| **Word Statistics** | | | |
| Number of words: | 1517 | Average length: | 4.20 letters |
| | | Syllables per word: | 1.37 |

<Enter: Next Screen> <Esc: Done>

# BUILDING WORKPLACE VOCABULARY FOR MILLWRIGHTS: COMPOUND WORDS

**OBJECTIVE:** **To learn a system for finding the meanings of compound words.**

Words are somewhat like tools. Both require people for them to be of use. Indeed, they have no purpose until you put them to use. Words, like tools, come in many sizes and have many different purposes. Sometimes, however, there are just not enough words or tools.

Have you ever used a vise grip to increase your leverage on a small wrench? You made the distance between the wrench and your arm bigger. Then you were able to move the wrench more easily. You made two tools do the work of one.

This same thing happens with words. That is, two smaller words make up a larger word. Such words are called **COMPOUND WORDS**. For example, consider the word ***freehand*** in this sentence:

> The band saw can also be used for straight cutting and for ***freehand*** cutting.

***Freehand*** is a **COMPOUND WORD**. Your text contains many compound words. You need a way for finding what they mean. The following steps provide this.

**STEP 1:** Read the compound word. Find the two smaller words within it. Sometimes it helps to draw a line between the two.

**STEP 2:** Find the meaning of the first word. Sometimes you will know this. Other times you may need to use a dictionary or ask someone for help.

**STEP 3:** Find the meaning of the second word. Sometimes you will know this. Other times you may need to use a dictionary or ask someone for help.

**STEP 4:** Put the two meanings together. That is, say the first meaning and, without stopping, say the second meaning. This is the meaning of the compound word.

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Consider again the sentence containing ***freehand***.

> The band saw can also be used for straight cutting and for ***freehand*** cutting.

The meanings you get when you figure out compound words are not exact ones. Instead, they sometimes give only an idea of what the word means. Often, however, this is all you need to know.

# EXERCISE 1

Tim needs to show a new worker how to use a lathe. He has used a lathe for many years. But, he wants to be sure he knows how the text explains the lathe. This way, he won't confuse his helper. His text provides the following information:

> The ***gearbox*** on a lathe contains the gears and mechanisms needed to transmit feed rates from the headstock spindle to either the feed rod or lead screw. The lead screw moves the carriage during threading operations. The feed rod moves the carr***iage du***ring turning, boring, and facing operations.

1. What does ***gearbox*** mean to you?

2. Draw a line between the two words that make up the word ***gearbox***.

G E A R B O X

3. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

4. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

5. Now write the two definitions side-by-side.

_____

_____

6. How is the meaning you wrote in #1 like the one you wrote in #5? How is it different?

_____

_____

7. What two parts of the lathe are being compared in the paragraph?

_____

_____

❖

## EXERCISE 2

Susan needs to work on a lathe. The lathe sits near a wall. It is too heavy to move. She needs a special kind of screwdriver. She checks her text to see if there's one that will work on the back of a machine. She finds the description below:

> The ***offset screwdriver*** is used in tight, hard-to-get-at places. The offset ratchet screwdriver is used to insert or remove screws quickly. The blade is turned by pushing the handle down instead of turning.

1. What does ***offset*** mean to you?

_____

2. Draw a line between the two words that make up the word ***offset***.

**O F F S E T**

3. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

4. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

5. Now write the two definitions side-by-side.

_____

_____

6. How is the meaning you wrote in #1 like the one you wrote in #5? How is it different?

_____

_____

7. What does ***screwdriver*** mean to you?

_____

_____

8. Draw a line between the two words that make up the word ***screwdriver***.

S C R E W D R I V E R

9. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

10. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

11. Now write the two definitions side-by-side.

_____

_____

12. How is the meaning you wrote in #7 like the one you wrote in #11? How is it different?

_____

_____

13. Name another time when you might need an offset screwdriver.

_____

_____

❖

## EXERCISE 3

Mark needs to cut a piece of flat metal. He has carefully measured and marked the top and bottom of the piece. Now he wants to draw a cutting line. He uses his square to do so. When he comes to his ABC class, he finds he's not the first to do so. This is what he reads:

> The flat steel square (commonly called a framing or carpenter's square) consists of a blade and a tongue at right angles. The sides of this square are divided into inches and fractions of an inch, and come in different lengths. Both tongue and blade may be used as a rule and as a ***straightedge***.

1. What does ***straightedge*** mean to you?

2. Draw a line between the two words that make up the word ***straightedge***.

S T R A I G H T E D G E

3. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

4. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

5. Now write the two definitions side-by-side.

_____

_____

6. How is the meaning you wrote in #1 like the one you wrote in #5? How is it different?

_____

_____

7. A flat steel square is an example of a tool that's used in more than one profession. It would be a specialized tool. Look at the word ***rule*** in the last sentence. Is it a general, specialized, or technical vocabulary word? Why do you say this?

_____

_____

❖

# EXERCISE 4

Tim's new helper learns quickly about the lathe. He does, however, have trouble remembering the names of the lathe parts. This bothers him. Tim gives his helper a copy of his ABC text. The helper finds the following information about lathe parts:

> The ***tailstock*** supports the end of long ***workpieces***. The tailstock spindle also holds cutting tools such as drills and reamers. The tailstock moves on the ways according to the length of the workpiece and may be clamped into position with the tailstock clamp. The tailstock spindle may be moved in and out by the ***handwheel*** and locked into position by the tailstock spindle lock. The tailstock is made in two parts. This allows it to be adjusted either toward or away from the operation by adjusting screws. It is adjusted to turn tapers (offset method) or to align the tailstock with the ***headstock***.

1. What does ***workpieces*** mean to you?

_____

_____

2. Draw a line between the two words that make up the word ***workpieces***.

W O R K P I E C E S

3. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

4. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

5. Now write the two definitions side-by-side.

_____

_____

6. How is the meaning you wrote in #1 like the one you wrote in #5? How is it different?

_____

_____

7. What does ***handwheel*** mean to you?

_____

_____

8. Draw a line between the two words that make up the word ***handwheel***.

H A N D W H E E L

9. Write the first small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

10. Write the second small word on the line below. Then define it by using what you know or with a dictionary.

_____

_____

11. Now write the two definitions side-by-side.

_____

12. How is the meaning you wrote in #7 like the one you wrote in #11? How is it different?

_____

_____

13. What do ***tailstock*** and ***headstock*** mean to you? Identify the three smaller words that combine to make these two words.

_____

14. What is another meaning for ***stock***?

_____

_____

15. ***Head*** and ***tail*** refer to location. What does this tell you about the location of these parts of the lathe?

_____

_____

16. Name another profession that uses the term ***headstock***. Is this word an example of general, specialized, or technical vocabulary?

_____

_____

❖ ❖